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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,187	07/09/2001	James R. Millis	3161-29-1	8418

22442 7590 09/26/2003

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EXAMINER

BASI, NIRMAL SINGH

ART UNIT	PAPER NUMBER
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1646

DATE MAILED: 09/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,187

Applicant(s)

MILLIS ET AL.

Examiner

BAS, Nirmal
eyler-yvonne

Art Unit

1646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-92 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-11, 23, 24-47, 83-92 drawn to a method of production of a-tocopherol or a-tocopherol esters comprising biologically producing the starting material farnesol and converting it.

Group II, claim(s) 12-22, 48-92 drawn to a method of production of a-tocopherol or a-tocopherol esters comprising producing the starting material geranylgeraniol and converting it.

While both methods share a common end result, the production of a-tocopherol, they require completely different method steps, depending on the starting material to be chemically converted and are therefore improperly combined in a single claim-Markush Group formal and do not form a single general inventive concept and require non-cohesive searches and considerations for each method.

This application further contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Upon selection of either method I or method II; applicant is further required to elect from the following species:

If method I is selected:

Applicant is required to choose a species of microorganism as follows:

- a) microorganism genetically modified to decrease action of squalene synthase
- b) microorganism genetically modified to decrease squalene synthase activity and to increase HMG-CoA reductase activity.
- c) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and acetoactyl Co-A thiolase
- d) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and HMG-CoA syntase.
- e) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and mevalonate kinase
- f) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and phosphomevalonate kinase
- g) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and phophomevalonate decarboxylase
- h) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and isopentenyl pyrophosphate isomerase

i) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and farnesyl pyrophosphate synthase

j) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and D-1-deoxyxylulose 5-phosphate synthase

k) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and 1-deoxy-D-xylulose 5-phosphate reductoisomerase.

l) microorganism genetically modified to decrease squalene synthase activity, to increase HMG-CoA reductase activity and geranylgeranyl pyrophosphate synthase.

m) microorganism genetically modified to increase geranylgeranyl reductase activity.

n) microorganism genetically modified to increase dimethylallyl transferase activity

o) microorganism genetically modified to increase dimethylallyl transferase activity and farnesyl pyrophosphate synthase activity

p) microorganism genetically modified to increase dimethylallyl transferase activity and geranylgeranyl pyrophosphate synthase activity

q) microorganism genetically modified to increase isoprenol kinase activity

r) microorganism genetically modified to increase prenil kinase activity

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The claims are deemed to correspond to the species as listed above.

The following claim(s) are generic: 24,25, 34-38, 42, 45, 46, 47, 48, 49, 60-64, 68, 71, 72, 74, 76-79, 83.


The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: Each of species of microorganism is a different, having different genetic modifications and different biological characteristics, that are not shared by each other. Each microorganism requires a search and consideration that is non-cohesive with the search and consideration required for any other microorganism, and therefore does not share a single inventive concept.

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Any inquiry concerning this communication should be directed to Basi Nirmal at telephone number 703-308-9435.



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